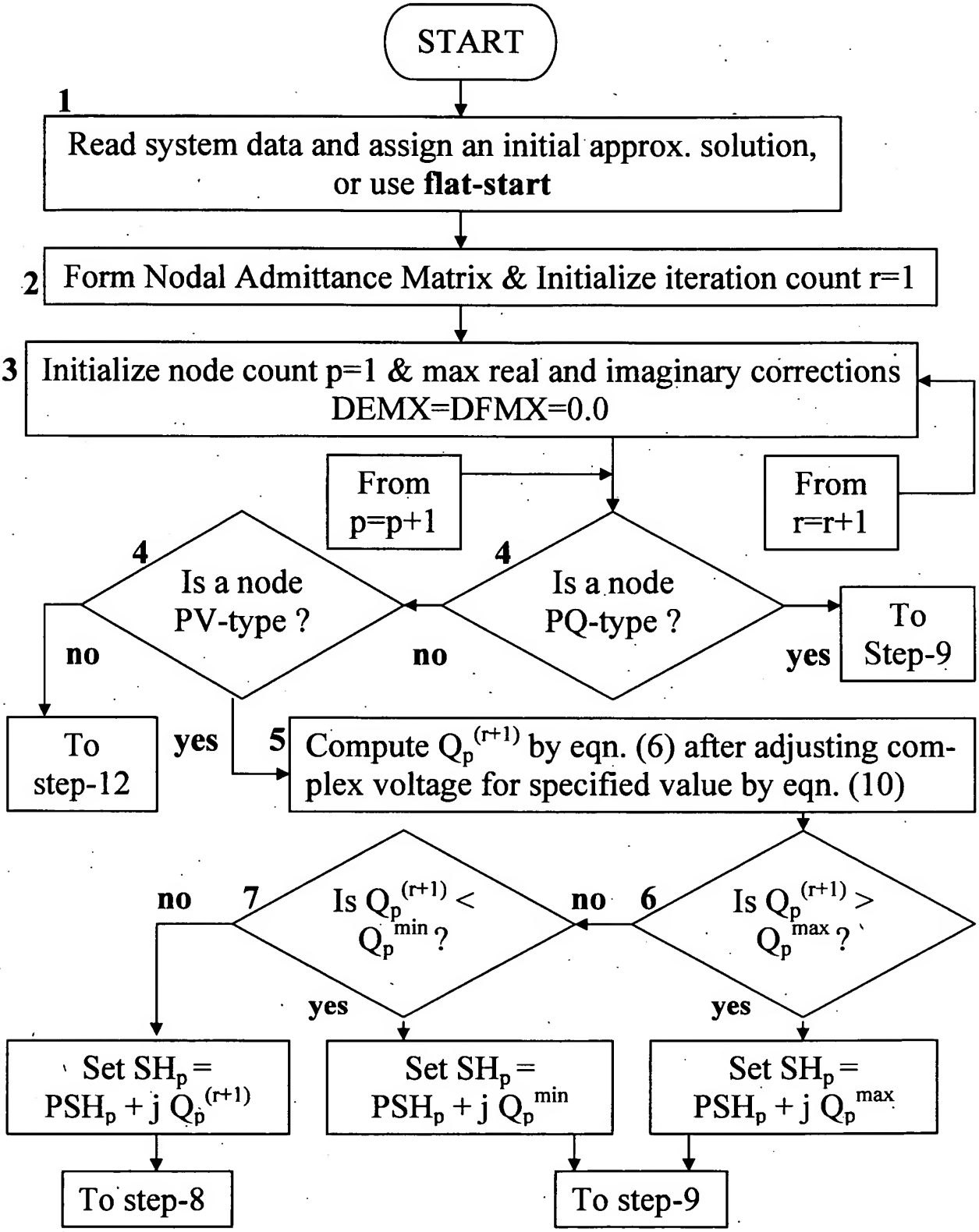

Fig.1a: Prior Art: Flow-chart of Gauss-Seidel Loadflow (GSL) Method

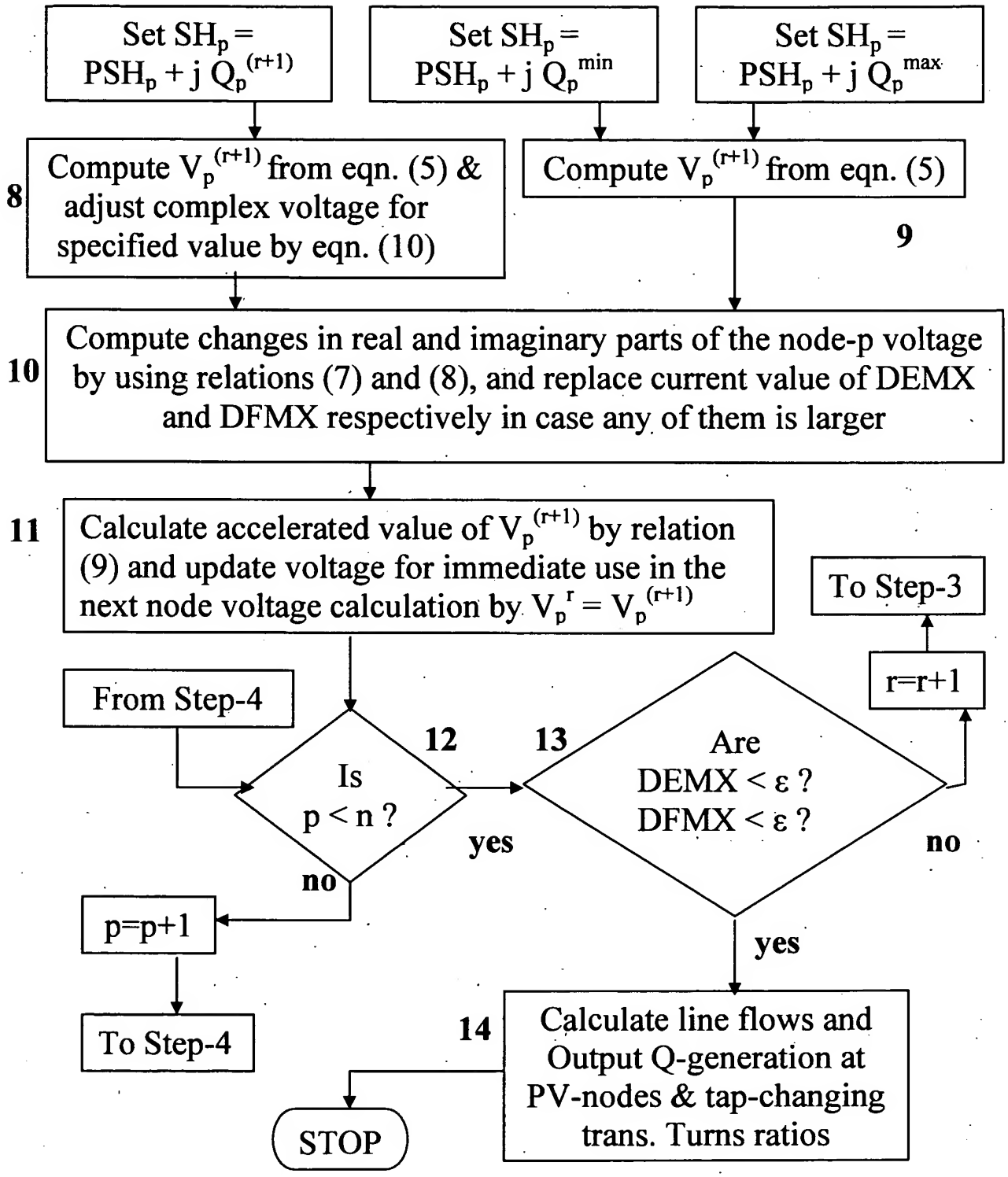

Fig.1a: Prior Art: Flow-chart of Gauss-Seidel Loadflow (GSL) Method

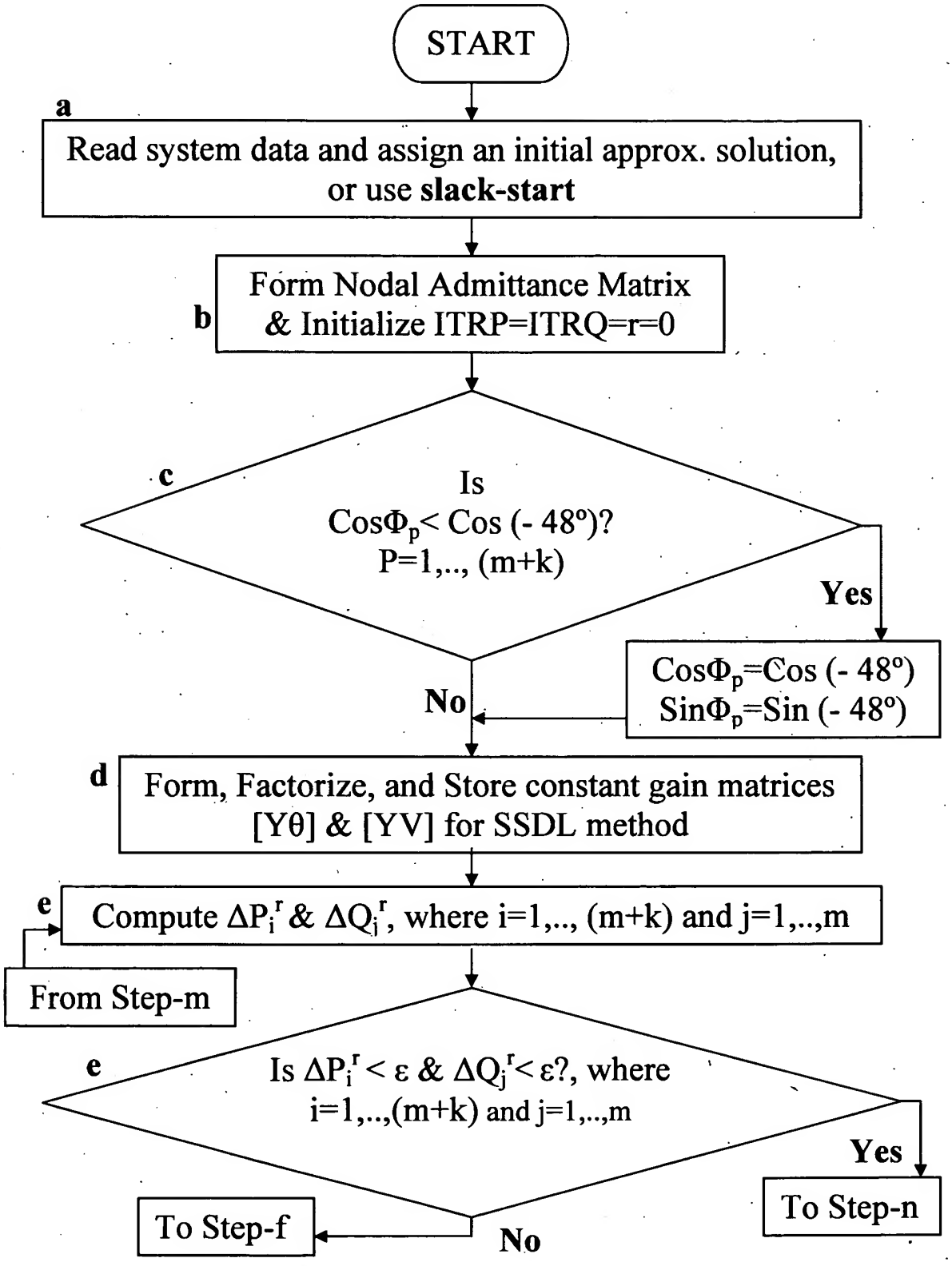

Fig.1b: Prior Art: Flow-chart of Super Super Decoupled Loadflow (SSDL) method

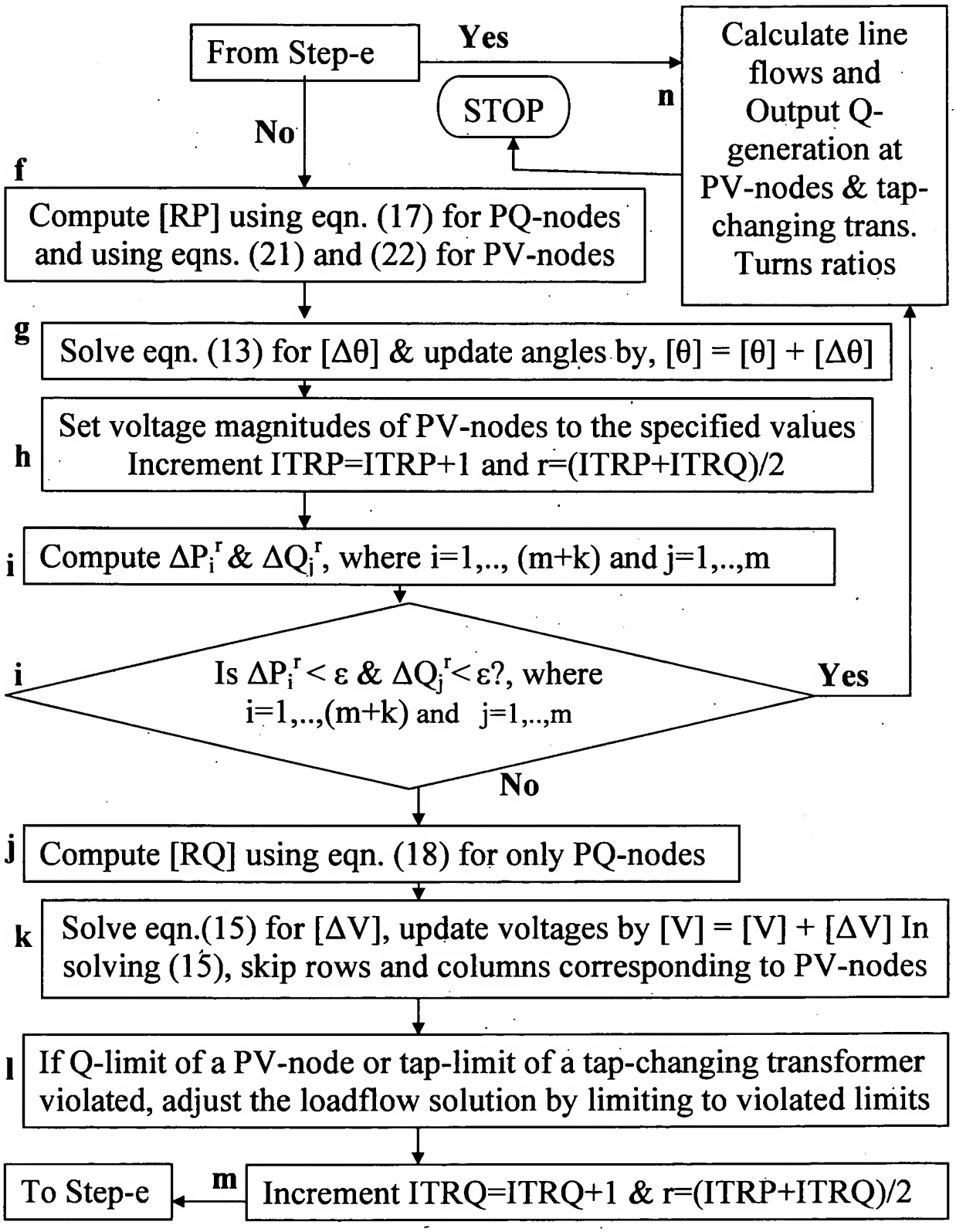

Fig.1b: Prior Art: Flow-chart of Super Super Decoupled Loadflow (SSDL) method

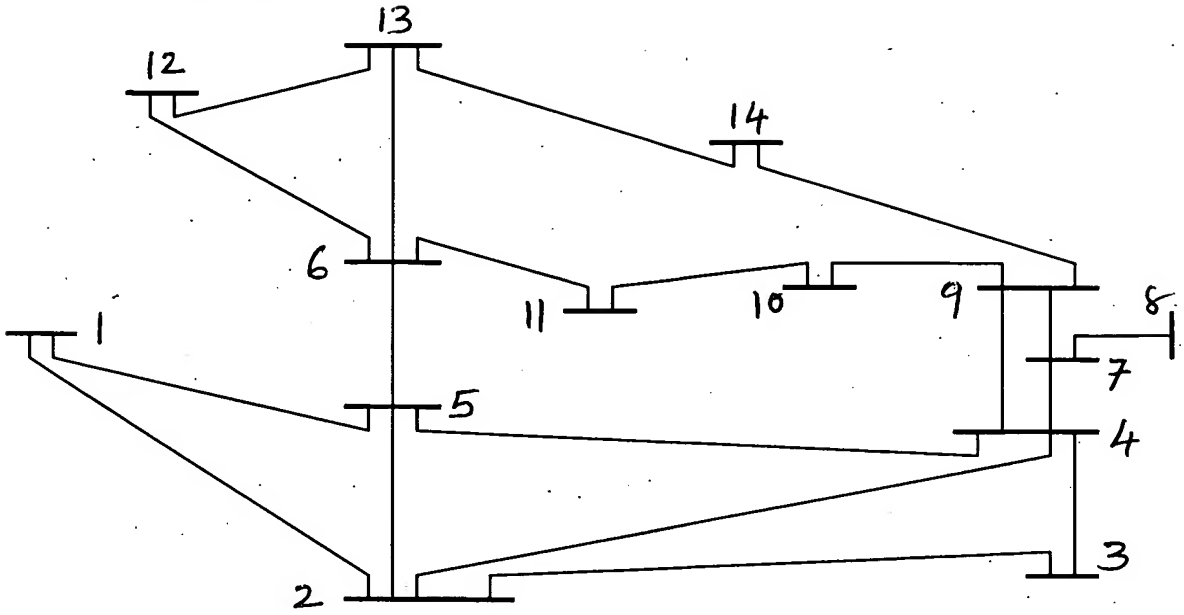

Fig. 2a: One-line diagram of IEEE 14-node network

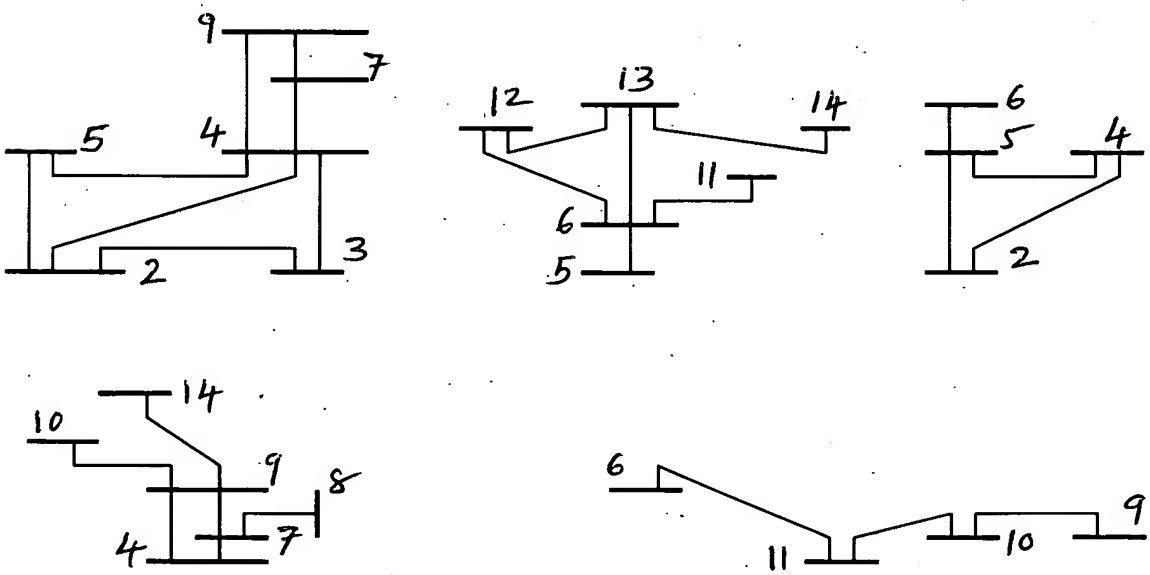

Fig. 2c: Non-redundant Level-1 sub-networks of fig. 2b are regrouped to reduce the number of processors required without increasing the number of nodes in any regrouped sub-network larger than the original largest sub-network of 6-nodes

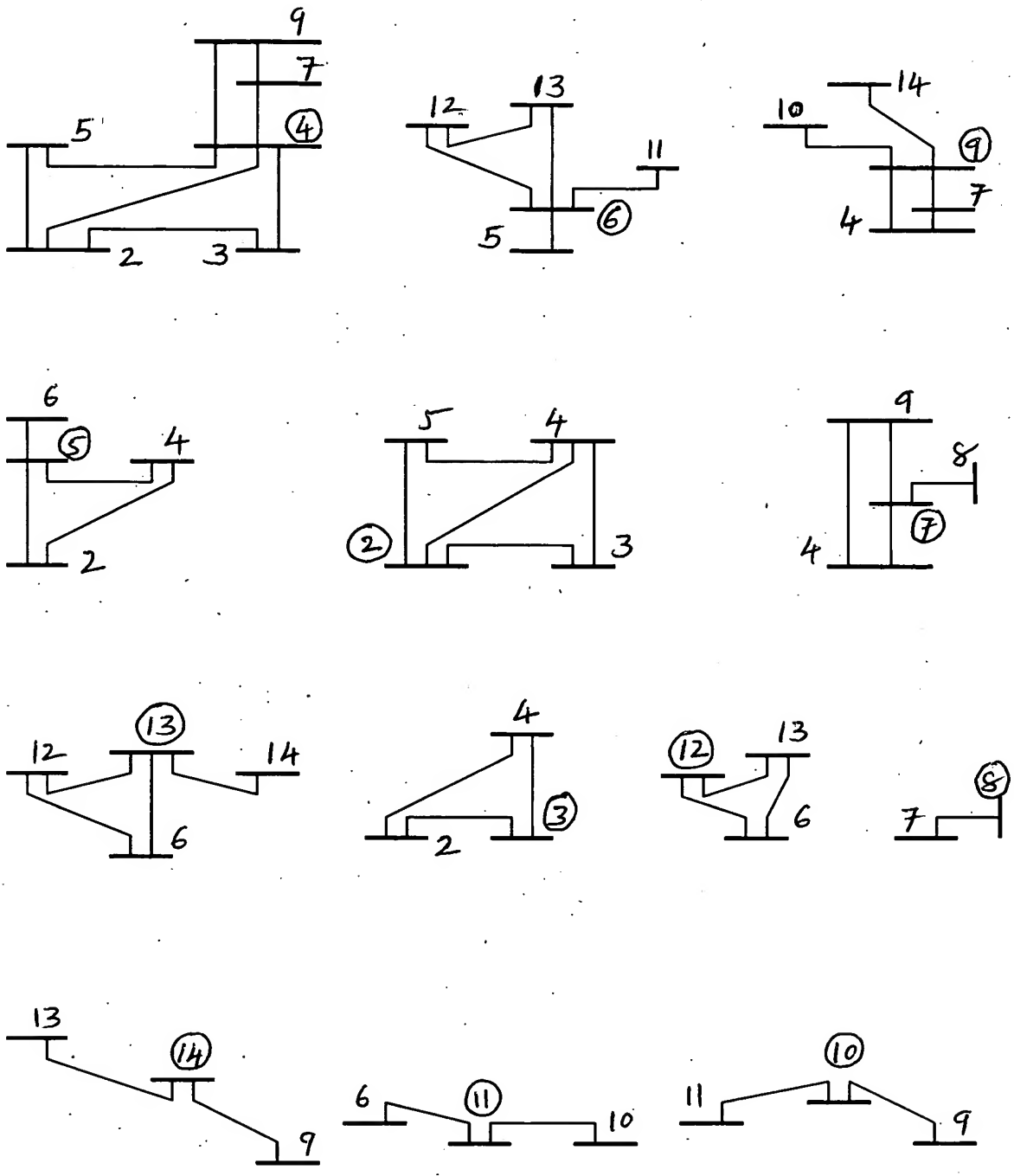

Fig. 2b: Level-1 sub-networks around circled nodes for the network of fig. 2a

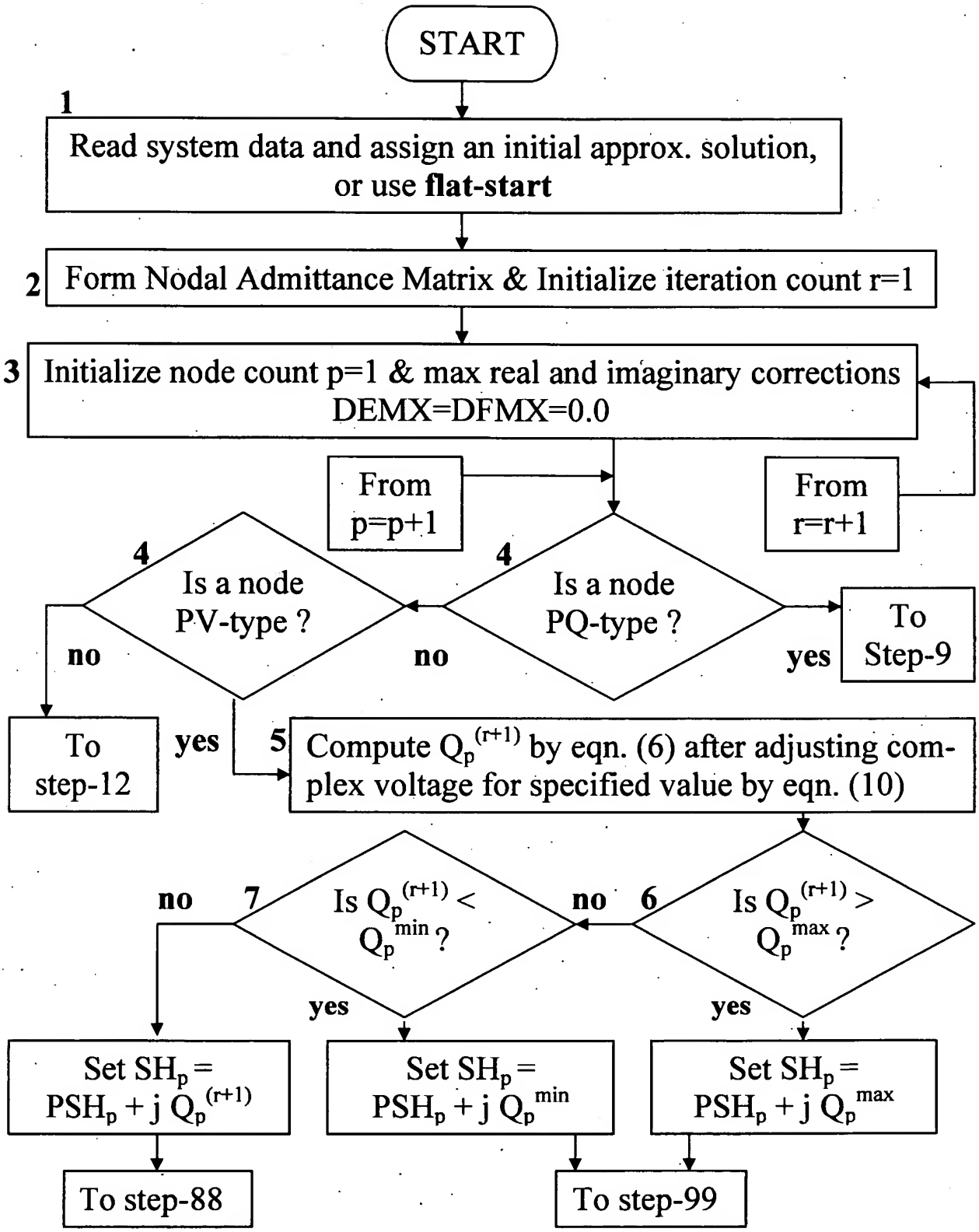

Fig.3a: Invention: Flow-chart of Gauss-Seidel-patel Loadflow (GSPL) Method

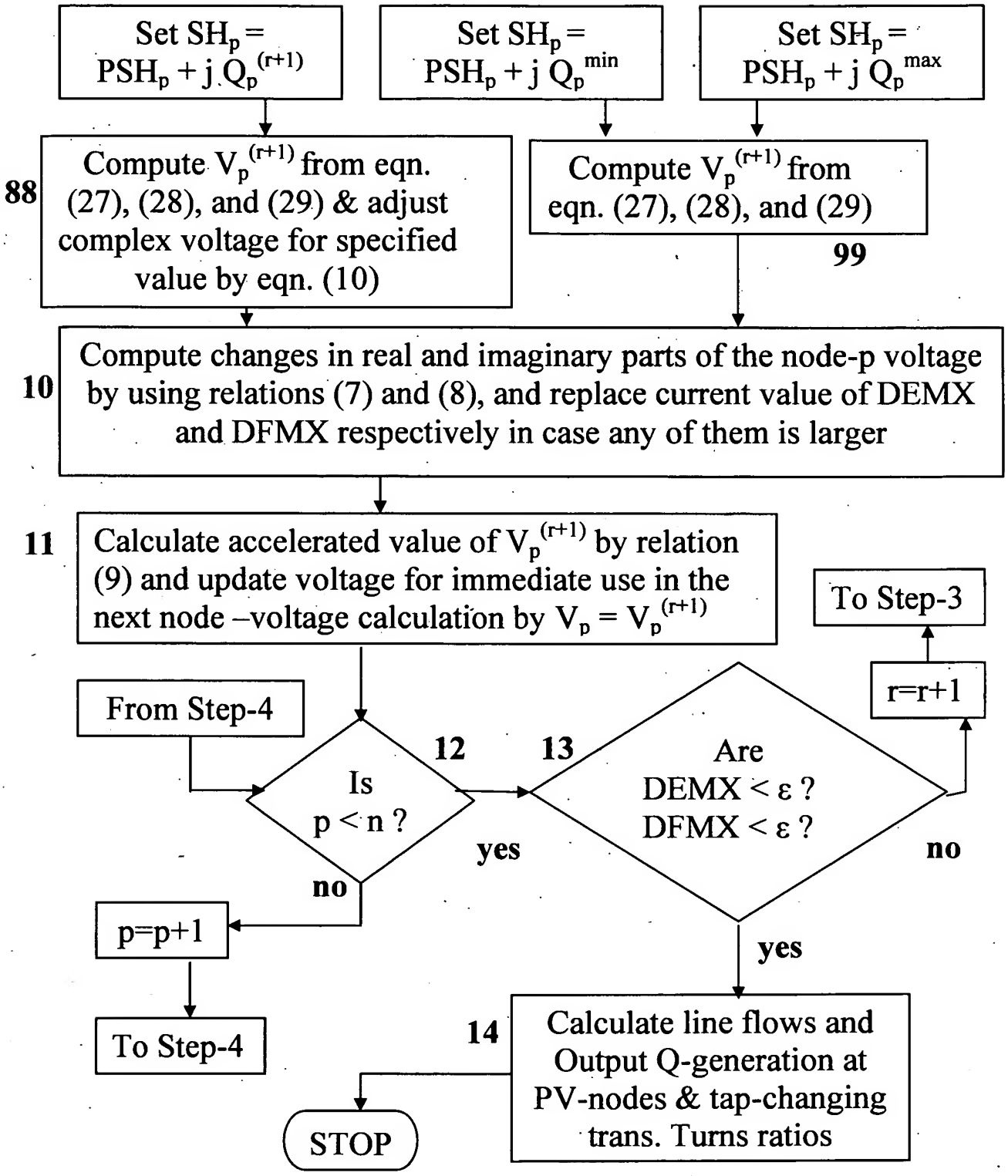

Fig.3a: Invention: Flow-chart of Gauss-Seidel-patel Loadflow (GSPL) Method

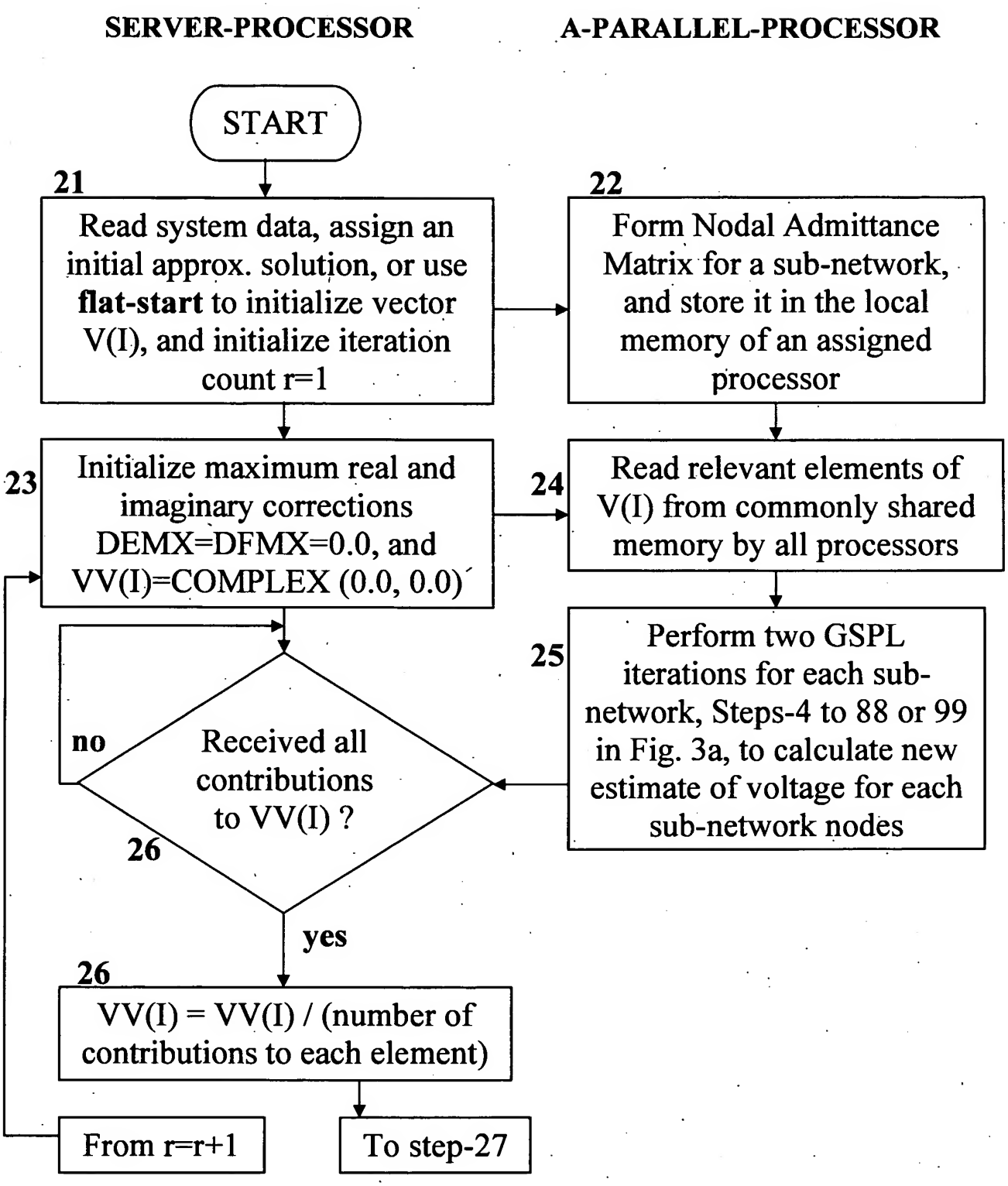

Fig.3b: Invention: Flow-chart of Parallel-Gauss-Seidel-Patel Loadflow (PGSPL) Method

SERVER-PROCESSOR A-PARALLEL-PROCESSOR

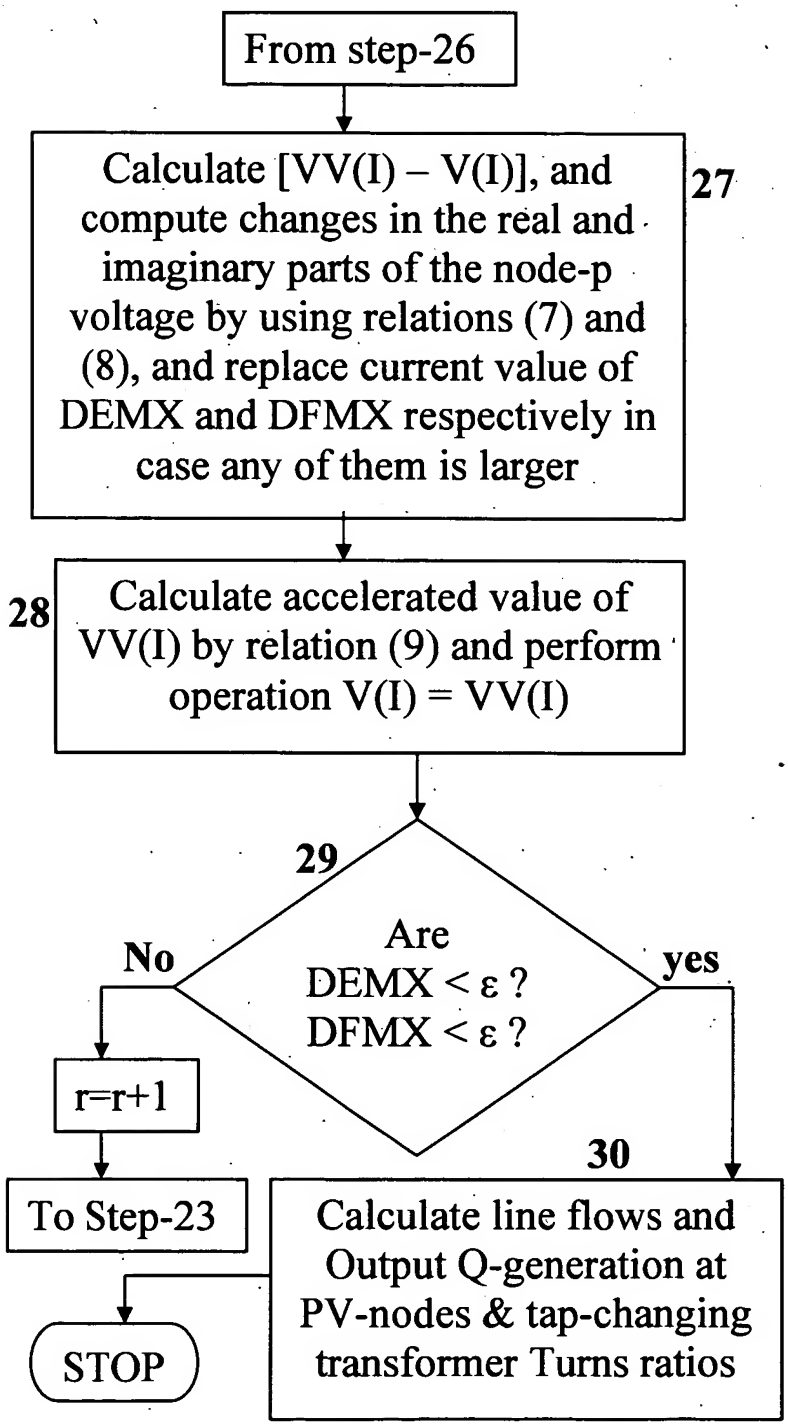

Fig.3b: Invention: Flow-chart of Parallel-Gauss-Seidel-Patel Loadflow (PGSPL) Method

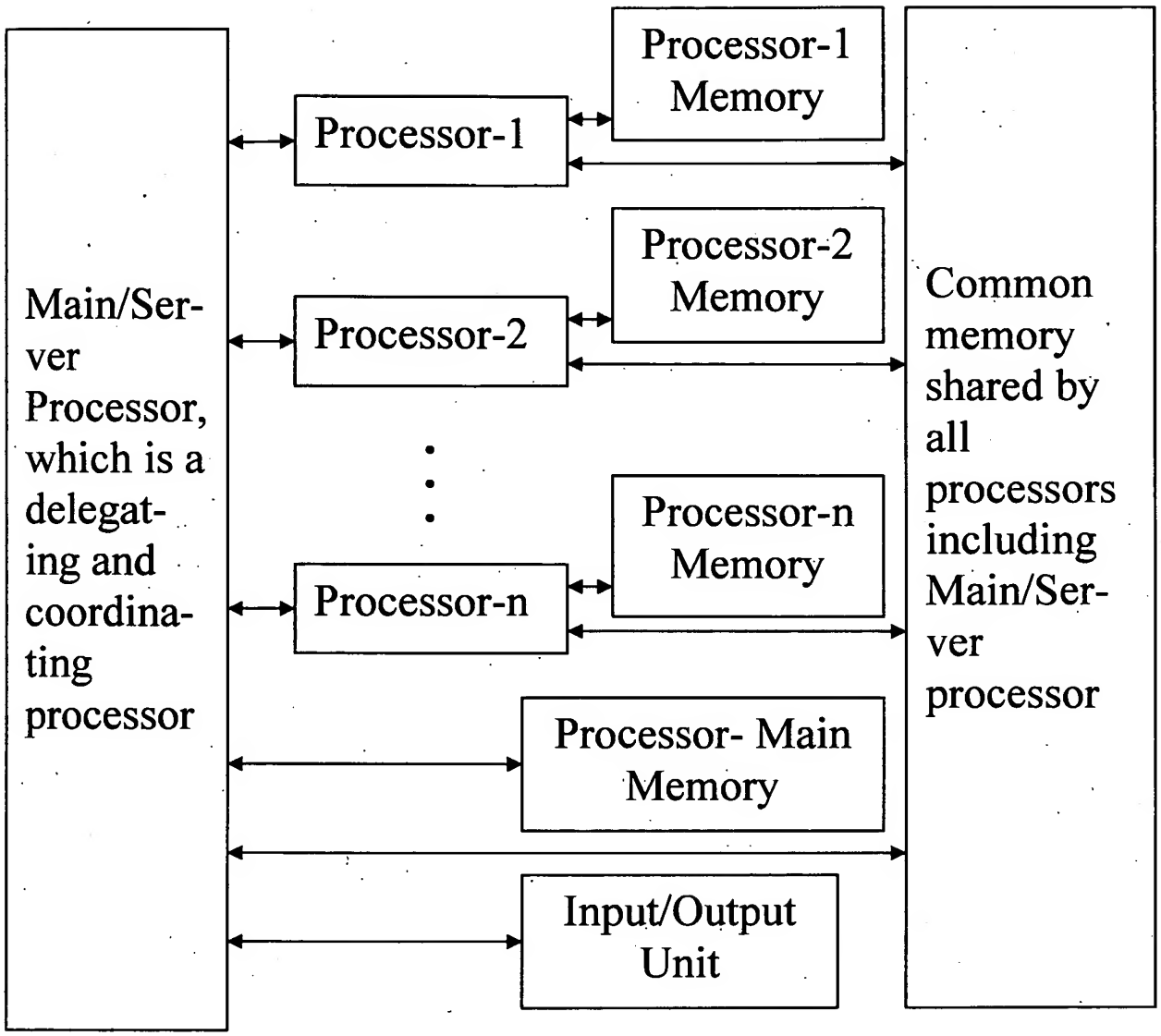

Fig. 4: Invented Parallel computer Architecture /organization

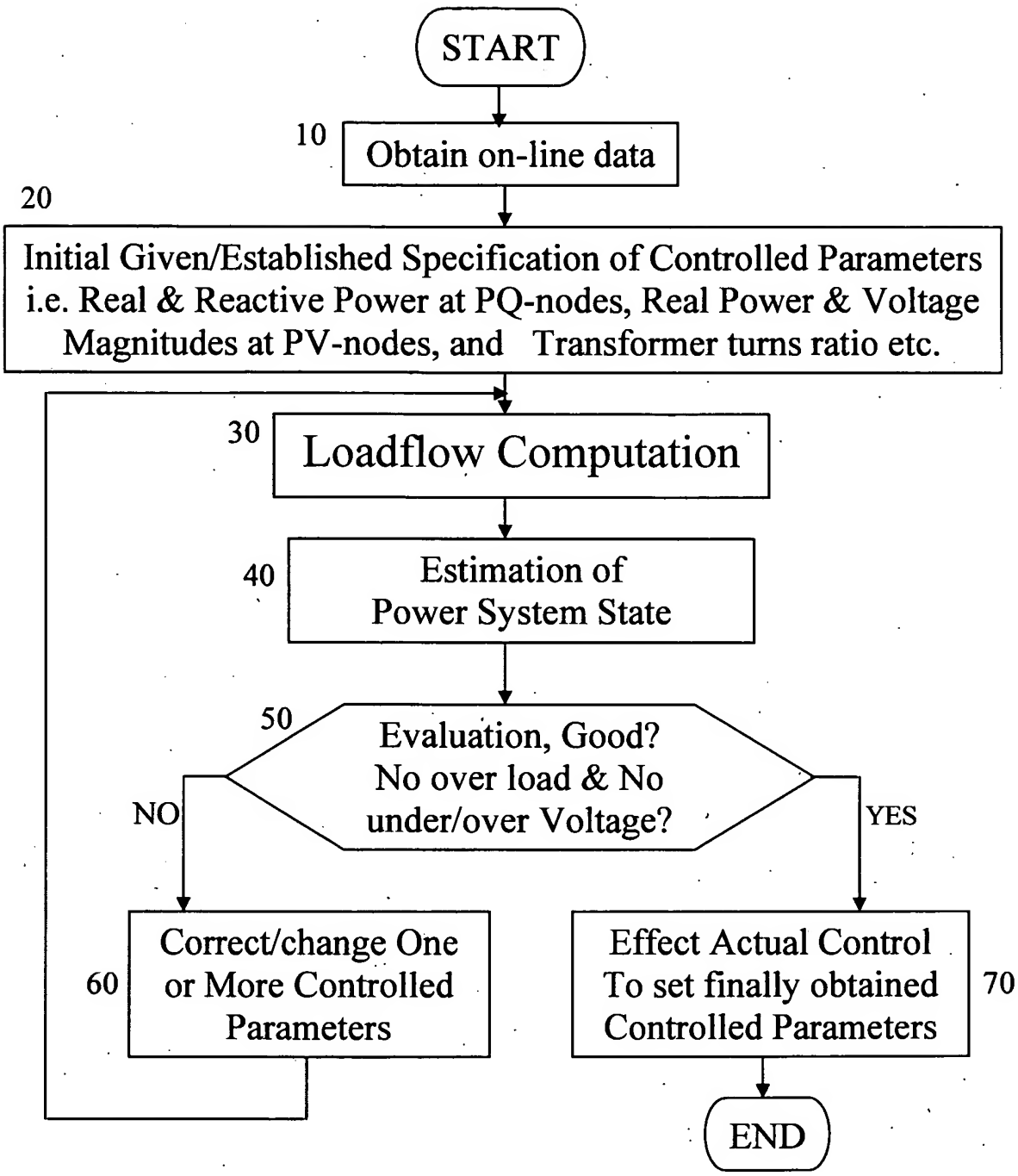

Fig.5: Loadflow Computation in Power Flow Control and/or Voltage Control in Electrical Power System

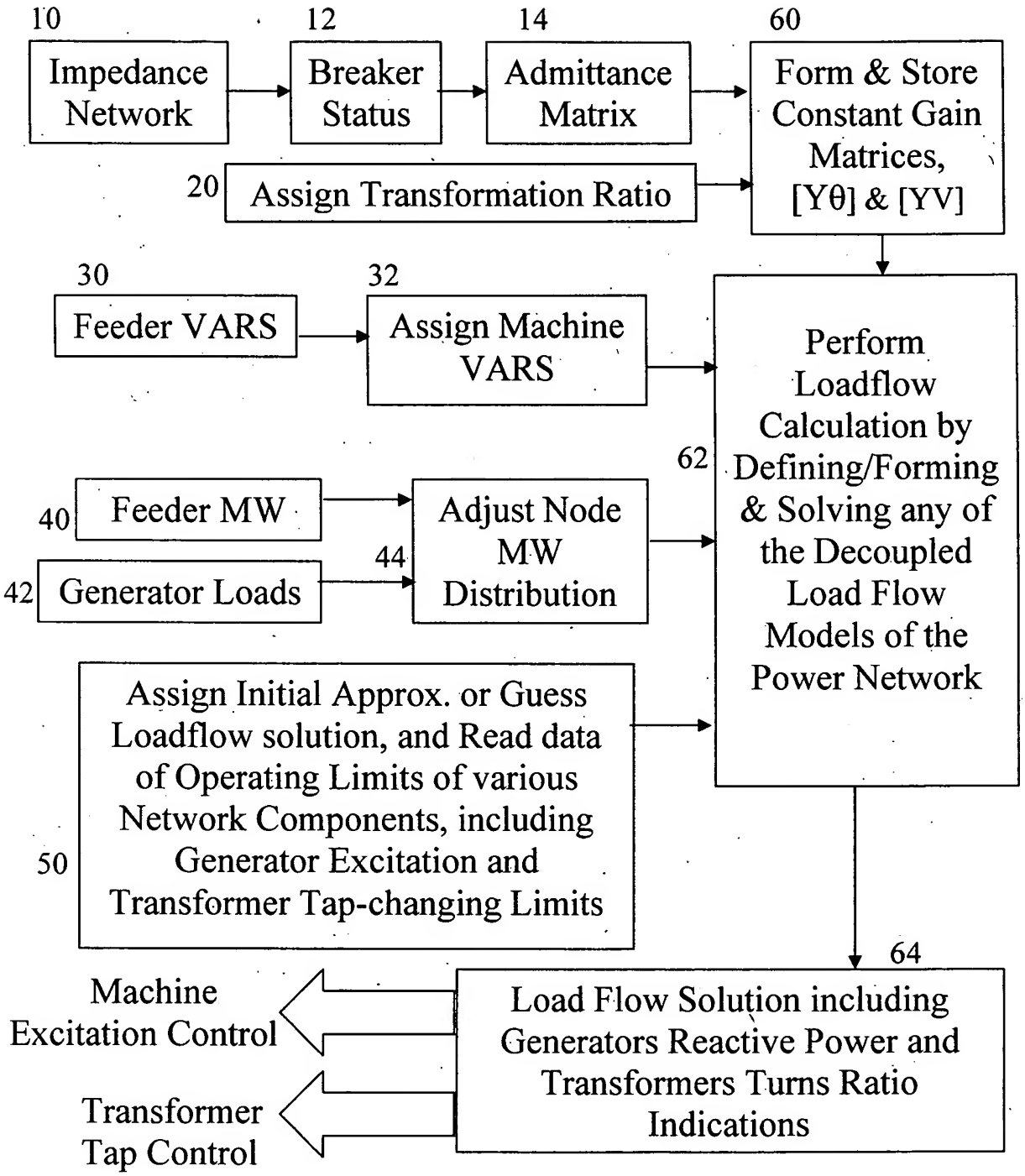

Fig. 6: Load-Flow Computation for Voltage Control in Electrical Power System

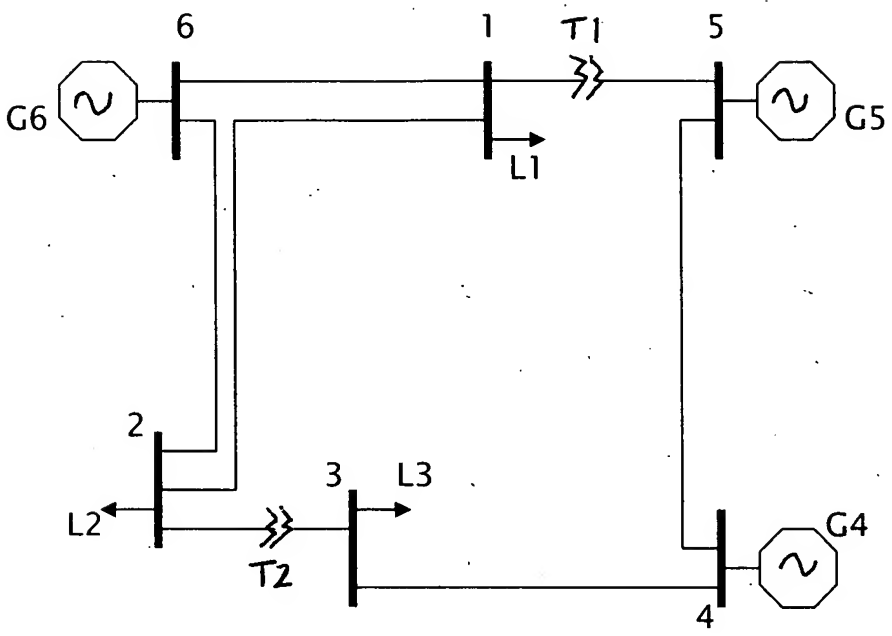

Fig. 7: An Exemplary 6-node Power System

Nodes: 1, 2, 3 are PQ-nodes; arrows extending outwards L1, L2, L3 are connected loads including Electrical Motor loads

Nodes: 4 and 5 are PV-nodes, where equivalent plant generators G4 and G5 are connected

Nodes: 6 is the reference/slack/swing node, where equivalent biggest plant generator G6 is connected

T1 and T2 are tap-changing Transformers controlling voltages of noses 1 and 2 respectively